



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4610

Web site: <http://gf.state.wy.us>

GOVERNOR
DAVE FREUDENTHAL

DIRECTOR
STEVE FERRELL

COMMISSIONERS
JERRY GALLES – President
CLIFFORD KIRK – Vice President
CLARK ALLAN
FRED LINDZEY
RON LOVERCHECK
ED MIGNERY
BILL WILLIAMS, DVM

November 12, 2008

The Honorable Dave Freudenthal
State Capitol Building
200 West 24th Street
Cheyenne, WY 82002-0010

Dear Governor Freudenthal:

Thank you for your continued interest, involvement, and support regarding energy development and natural resource protection in the Little Mountain area south of Rock Springs. This letter and enclosed information is in response to your letter of October 28, 2008 in which you requested additional information and that our office refine the State's position on the Little Mountain complex and the upcoming December Oil and Gas Lease Sale. We share your hope to see rational decisions about the issuance of any new leases in the area and to ensure that any development that is authorized be conducted with consideration and protection of wildlife resources and habitat.

The following information pertains to the Little Mountain Ecosystem (LME). For this purpose, we define the LME as all lands bounded by Wyoming Highway 430 on the east, Interstate Highway 80 on the north, and Flaming Gorge Reservoir on the west, and the Wyoming-Colorado Stateline on the south. This complex represents a relatively intact ecosystem that provides all life requirements for a host of popular game, fish, and sensitive nongame species.

To fully understand our position regarding this critically important area, to maintain any semblance of what the sportsmen and wildlife enthusiasts of Wyoming currently enjoy in this area, we must maintain an intact ecosystem, large blocks of undeveloped lands, and unhindered migration corridors. Any reduction in habitat function and connectivity *will* lead to significant losses to wildlife resources in this area. Responsible development can occur in some portions of the LME without a significant reduction in wildlife resource value, but some declines will occur under any development scenario. Unitization of leased mineral resources within all or much of the LME will be necessary to ensure that wildlife resources are adequately considered and protected under a development scenario.

Our approach and answers to your questions are based on what we consider, as wildlife managers, to be the only way significant wildlife values can be maintained in the LME under a development scenario. We refer to a (currently in review) draft of Wyoming Game & Fish Department "Standards Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats", which is being amended to be consistent with the Governor's executive order regarding development within greater sage-grouse habitats and has

Governor Dave Freudenthal

November 6, 2008

Page 2

been amended to reflect the latest research concerning mule deer. We can provide a copy of these draft standard guidelines at your request. We have divided the LME area into Zones that represent various development and necessary protection scenarios needed to maintain wildlife quality and quantity (See Map and Zone Key).

Deviation from these recommended standards and protections will yield unacceptable losses to these prized resources. The Wyoming Game and Fish Department continues to oppose development in crucial habitats and any additional leasing for energy development in the Little Mountain Ecosystem.

Please find our responses to your inquiry below. If additional clarification or information is needed, please do not hesitate to contact our office.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve DeCecco", written in a cursive style.

Steve DeCecco
Regional Wildlife Supervisor
Green River Region

Attachment: Little Mountain Ecosystem Map with Development/Management Zones

Cc: Director Steve Ferrell

Response to Specific Questions and Additional Information

1) Are there areas that should have “No Surface Occupancy” (NSO) applied, even with current leases? If so, where are these areas and why should they be NSO?

The simple answer to this question is “yes”. To maintain some level of an intact ecosystem and functional wildlife habitats, two areas that represent the core of the LME need to maintain an NSO or no lease status. These Zones are delineated on the attached map as “A” and “B.” Zone “A” represents a combination of the Carrant Creek and Sage Creek watersheds. NSO status is currently applied to the majority of the Carrant Creek watershed, and a large portion of the upper portion of the Sage Creek watershed is not leased. Zone “B” represents the Red Creek watershed, which is in a “No Lease” zone as identified by the Rock Springs RMP. We support the NSO designation.

These areas represent the heart of the LME, and maintenance of these two areas is key to maintaining some level of ecosystem and habitat function. It cannot be stated strongly enough that development within these areas will compromise and ultimately prohibit our ability to do so. In combination, they represent the most productive portion of the LME and represent a significant proportion of sensitive species habitats. All of the Colorado River cutthroat trout habitats in the LME occur in these watersheds. Approximately 75% of LME habitat treatments to restore LME ecosystem function conducted during the past 20 years have been done in “A” and “B.” Soil stability in these watersheds is very low and development will further destabilize these fragile areas, reduce water quality, and increase downstream sedimentation and nutrient loading (e.g. Flaming Gorge Reservoir). The combination of “A” and “B” contain nearly (excluding the upper ½ of Pine and Aspen Mountains) all the habitats both deer and elk in this area rely upon for fawn and calf production and rearing. If either of these Zones becomes fragmented through development activities (both development and production), maintenance of publicly acceptable quality and quantity wildlife resources in the LME will be unachievable.

2) What standards should be applied and enforced outside of the “No Surface Occupancy” (NSO) areas?

We have defined a tiered system of varying standards we recommend be applied outside Zones “A” and “B.” Three remaining Zones exist: “C”, the Sugarloaf Basin; “D”, Aspen Mountain to Pine Mountain; and “E”, the remainder of the LME. The standards that would allow for a development scenario while maintaining some of the wildlife values include:

Sugarloaf Basin “C” – We feel this represents an opportunity and a “laboratory” to demonstrate that quality wildlife habitat can be maintained in the face of responsible development. This would provide Devon Energy with a significant and genuine opportunity to show the country they are responsible and are concerned for more than the bottom line. A higher level of standards would be applied in this area, where maintenance of watershed/ecosystem function and wildlife habitat will be the main focus (as identified within the current Rock Springs RMP). Development of this Zone will occur through intense consultation and mutual agreement with

Wyoming Game and Fish concerning infrastructure (roads, pipelines, pads, etc.) location and seasonal stipulations throughout the life-of-project (including the production phase). Site-specific habitat features and function will dictate Department input. The Department will not oppose the opportunity to develop resources, but will endeavor to influence the timing, density, and methodology of development. The highest level of protections outlined in the Wyoming Game and Fish Commission's "Standard Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats" (in review) provides the basis for the standards to be applied in this area.

Aspen-Pine Mountains "D" – The Department will request that our new (draft in review) "Standards Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats" be applied in this area, with the understanding this will lead to losses in both wildlife habitat value and populations. Development under this scenario represents a significant compromise on the part of the Wyoming Game and Fish Department and will reduce public consumptive and non-consumptive wildlife use opportunities.

Remaining LME "E" – The Department comment in this Zone will be minimal. We reserve the right to comment in instances where special features, including sensitive species habitats, may be impacted, (e.g. midget-faded rattlesnake den sites and sage-grouse leks).

3) Are there areas that are so sensitive that they should not be leased, including already-leased parcels (due to slope, soil type, habitat type, riparian areas, etc.)?

The Wyoming Game and Fish Department fully understands the Nation's energy needs and does not necessarily oppose leasing liquid minerals providing that surface values and terrestrial and aquatic wildlife habitats are not compromised. Protections identified in Zones "A", "B" and "C" will permit resource extraction and wildlife habitat protection with adequate directional drilling technology providing outlined development scenarios are at no time violated. The Red Creek Watershed should remain in a permanent "No Lease" status given its fragility, as should have the entire Sage Creek, Currant Creek, and smaller watersheds west of Little Mountain that flow directly into Flaming Gorge Reservoir. Avoidance (including road and pipeline construction) of extreme slopes, fragile soils and riparian areas within the remaining Zones may reduce some impacts, as will greatly reducing the development footprint/dispersion, and reduction of native vegetation removal.

4) What are the most important/sensitive areas for hunting, fishing and camping uses?

At present, under the "no development" scenario, this extremely popular area receives significant and widespread use throughout the LME, particularly hunting. Some current clustering of use occurs by species pursued or user group.

Hunting

- Elk – All of Zones A, B, and C, and the higher elevations in Zone D (Aspen, Pine, Miller and Potter mountains, Laney Rim, Elk Butte, Upper Firehole Basin, and Upper Little Bitter Creek).
- Deer – Same as for elk.

- Pronghorn – Zones C and D.
- Sage-grouse – Zones A, C, and D.
- Moose – Zones A, B, and the higher elevations in Zone D.

Camping

- All of Zone A, C, and D (Pine and Aspen Mtns. and the shoreline of Flaming Gorge).

Fishing

- Zones A and C (East shoreline of Flaming Gorge Reservoir).

5) How long should stipulations be applied? (Exploration, development, production)

Under this “development plan”, application of seasonal stipulations will vary throughout the LME. NSO will occur in Zones A and B, so seasonal stipulations (excluding exploration) do not apply. In the remainder of the area, we recommend the following seasonal stipulations be applied:

Exploration

- Zones A through E. Application of any required and necessary wildlife seasonal stipulation (see “Standard Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats”) *and* avoid big game hunting seasons following consultation with the Department.
- Avoidance of site-specific areas around midget faded rattlesnake hibernacula through consultation with the Department.

Development

- Zone A and B. NSO, other stipulations are not applicable.
- Zone C. Application of applicable seasonal stipulations to protect crucial and important wildlife habitats as defined by the new (draft in review) “Standards Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats.”
- Zone D. Application of applicable seasonal stipulations to protect crucial and important wildlife habitats as defined by the new (draft in review) “Standards Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats.”
- Zone E. Seasonal stipulations may be waved in this area.
- Avoidance of site-specific areas around midget faded rattlesnake hibernacula through consultation with the Department.

6) What on-site and off-site mitigation should be required?

The Department had intended to direct “off-site” mitigation efforts toward this unique and valuable ecosystem in light of developments in other portions of the state. Offsite mitigation measures designed to offset impacts to the LME are nonexistent. If offsite mitigation is determined necessary, maintenance of habitat function and value in the LME has failed. Therefore all measures mentioned below should be applied “on-site” only, and those requiring funding should be paid entirely by the developer/operator(s).

- Purchase AUMs and grazing permits to establish forage reserves. This measure could have some limited off-site application.
- Fund onsite private land conservation easements.
- Pursue withdrawal of state land energy (O&G and wind) development leases in polygons A-D to minimize industrialization of the area and assist in maintaining ecosystem integrity and connectivity.
- Avoid future development of significant sized wind energy projects in polygons A-D. If wind energy projects cannot be avoided in the LME, unitized collaborative planning must occur between O&G developers, wind energy developers, and resource management agencies to minimize cumulative development impacts and maintain wildlife habitat integrity and function.
- Carefully planned phased energy development exhibiting successful vegetative rehabilitation on disturbed sites, which is implemented in a manner to provide adequate quantities of undisturbed quality wildlife habitat inside the LME.
- Fully apply adaptive management principles and BMPs that specifically benefit wildlife throughout the development and during the life of project.
- Collection of products at centralized facilities to reduce cumulative pipeline developments and use of remote monitoring during the production phase to reduce vehicle traffic and human presence.
- Directional drilling and multi-well pads to reduce surface disturbance and reduce human presence.

7) What pre/post-development monitoring should be required?

Pre and post-development wildlife monitoring should be viewed as a standard cost-of-doing-business for energy development companies, not as mitigation. This is merely an information gathering process that permits better decisions. Pre development monitoring will permit the Department and developer(s) to refine development plans to potentially reduce wildlife impacts. Post-development monitoring is necessary to clearly assess impacts and allow for true adaptive management. The Department requests the following pre and post development monitoring:

- Elk – GPS collar monitoring (periodically LOP)
- Mule Deer - GPS collar monitoring (periodically LOP)
- Pygmy rabbits – inventory distribution and abundance LOP
- Juniper Obligate Birds and Small Mammals – inventory distribution and abundance LOP
- Greater sage-grouse - GPS collar monitoring (periodically LOP)
- Herptiles
 - Lizards – inventory distribution
 - Snakes – Increase knowledge of life-history and response to development in Zone A and C through use of implant telemetry (midget faded rattlesnakes and Great Basin gophersnakes)
- Invasive plant species distribution and abundance, particularly cheatgrass.

- Pre and post sediment transport, nutrient loading, and channel geomorphology in all streams that drain to Flaming Gorge Reservoir.
- Volumes and quality of water produced from key spring and seep sources feeding streams in Zones A, C, and D.

8) Are current reclamation requirements and bonds sufficient?

No. Interim reclamation is often considered successful if any plant species, including noxious weeds such as halogeton, occurs on sites to be reclaimed. Additionally, final reclamation has often been unsuccessful in southwest Wyoming due to low precipitation zones, exacerbated by drought conditions. Removal of only the smallest amount of native vegetation, careful monitoring and timely control of invasive plant species and vegetation standards for both interim and final reclamation that include an appropriate mixture of grasses, forbs, and shrubs will improve standards and value to wildlife. We recommend the use of drilling mats since they have proved successful in reducing surface disturbance and accelerate reclamation in the Jonah Field development. Bonds for reclamation are sufficiently low at this time to permit some smaller companies to leave impacted areas unreclaimed. We support higher reclamation bonds and more stringent measurements to assure reclamation success.

9) What pad density thresholds, per species, before populations are reduced? Are there critical/crucial areas in which pad density should be decreased?

Efforts to reduce impacts to the three species listed below will provide protections for many of the other terrestrial species occurring within the LME. These must be combined with BMPs to be successful. Special considerations will need to be applied in some areas to reduce sensitive herptile species impacts (e.g. midget-faded rattlesnakes) such as speed limits, limited road construction and types, traffic levels, and avoidance of rocky den habitats.

Mule Deer - Research by Sawyer et al. (2008) during the first 5 years of natural gas development on the Pinedale Anticline documented that areas within 1.6 miles of well pads received significantly less deer use and were classified as low or moderate use areas. Based on Sawyer's research density of 1 well pad per square mile causes a moderate impact, and a density of 2-4 well pads per square mile causes a high impact. The impact is considered extreme when densities exceed 4 well pads per square mile. Impacts tend to cause displacement of deer to less desirable habitats or concentrate deer in areas further from pads. Both lead to increased mortality and/or habitat degradation.

Elk – Elk are extremely sensitive to disturbance and tend to abandon heavily impacted landscapes. No definition of moderate impact occurs within the literature given this sensitivity. A density of 1-4 pads per section results in high impacts to this species. Exceeding one well pad per section, can lead to range abandonment, artificial concentration, and ultimately population reduction.

Greater Sage-grouse – Greater sage-grouse populations are negatively affected by large-scale developments. To attempt to minimize impacts, establishment of a 0.6-mi. NSO around each occupied lek, limiting well pad densities to 1 per square mile within 2 miles of occupied leks, and implementing appropriate management practices should be sufficient to maintain occupied habitats.

10) What standard management practices should be required to reduce wildlife impacts?

Industry adoption and application of Best Management Practices (BMPs), as outlined within the Department's new (draft in review) "Standards Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats" will reduce impacts to wildlife resources.

11) What will elk distribution and densities look like under a field development scenario? Would there be an expectation of interstate movement and population shifts?

Based on all available literature and professional experience, elk will be displaced during exploration, development, and production. Full field development, without the recommendations outlined, will likely lead to abandonment of the area. Elk are the most popular big game animal in this area, and use the majority of the LME during some portion of the year. This planned development will negatively impact this resource, without question. It is extremely likely elk populations will shift to accommodate development activity to an area with little or no development. Based on current leasing maps, this will be extreme NE Utah and NW Colorado. While actual income to the state of Wyoming from elk licenses in this area are not a significant percentage of the Department's income, the value of this resource to the sportsmen's community is priceless.

Little Mountain Ecosystem (LME) Map and Zone Key

Zone A – Currant Creek and Sage Creek watersheds (NSO and Not Leased)
Zone B – Red Creek Watershed (Identified by BLM's RMP as "No Lease")
Zone C – Sugarloaf Basin (Apply high level of standards)
Zone D – Aspen & Pine Mountain (Apply new WGFD Standard Recommendations)
Zone E – Remaining Area within the LME (Minimal standards on project basis)

ZONE	AREA (Mile ²)	% Of LME AREA
A	185	15.3%
B	105	8.7%
C	170	14.0%
D	405	33.5%
E	345	28.5%
TOTAL LME	1,210	100%

Little Mountain Ecosystem

